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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,997	06/26/2001	Tsukasa Yagi	15162/03790	9619

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EXAMINER
NGUYEN, HOAN C

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 12/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/891,997	YAGI ET AL.	
	Examiner	Art Unit	
	HOAN C. NGUYEN	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-5 and 27-29 is/are pending in the application.
 - 4a) Of the above claim(s) 5-26 and 29-43 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-5 and 27-29 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) Interview Summary (PTO-413) Paper No(s) _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I (claims 1-5 and 27-29) in Paper on Aug. 27, 2003 is acknowledged.

Examiner would like to thank Mr. Mark A. Dodd clarify claim languages to avoid misunderstanding the claims.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on June 27, 2002 and September 4, 2001 was filed. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

Claim 4 and 5 are objected to because of the following informalities:

Claim 4 recites the limitation "the first pitch is 1/n of the second pitch, wherein n is a natural number not less than 2". There is insufficient antecedent basis for this limitation in the claim. There is nowhere in the specification disclosed n is a natural number and equal to 2 (claim 5); where nature number should be 1, 2, 3 ...

A specification discloses ONLY:

- “The pixel pitch in the vertical direction is 1/n (for example, 1/1.5) of the pixel pitch in the horizontal direction” (abstract); where $n=1.5 \neq 2$ would not be a nature number.
- “first pitch and the second pitch is 1/n of the other, wherein 1< n<2” (paragraph 13th); where $1 < n < 2$ would not be a nature number.
- “The number of pixels per a unit length in the vertical direction is n times ($1 < n < 2$) the number of pixels per the unit length in the horizontal direction, that is, the dot pitch in the vertical direction is n times the dot pitch in the horizontal direction. On the contrary, the dot pitch in the horizontal direction is 1/n of the dot pitch in the vertical direction. In the second embodiment, $n=1.5$; (paragraph 114th); where $1 < n < 2$ would not be a nature number.
- “The width ratio or the pitch ratio of the scanning electrodes in the second display area 12 to the scanning electrodes in the first display area 11 is not necessarily 1:2. For example, the ratio may be 1:3 (see FIG. 24b)” (paragraph 143th).

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamagishi (US4920409A).

In regard to claims 1-3, Yamagishi teaches (Fig. 1) a liquid crystal display apparatus comprising:

- a liquid crystal layer comprising liquid crystal;
- a plurality of first scanning electrodes Y1-Y7 aligned in a first direction at a first pitch, each of the first scanning electrodes extending in a second direction substantially orthogonal to the first direction;
- a plurality of signal electrodes X1-X3 facing the first scanning electrodes with the liquid crystal layer sandwiched between the signal electrodes and the first scanning electrodes, the signal electrodes being aligned in the second direction at a second pitch wider than the first pitch and each of the signal electrodes extending in the first direction.

wherein

- pixels are formed at intersections of the first scanning electrodes and the signal electrodes; and each of the pixels is a rectangle of which shorter sides are parallel to the first direction and of which longer sides are parallel to the second direction (claim 2).
- a width of each of the first scanning electrodes defines a length of the shorter sides of each of the pixels; and a width of each of the signal electrodes defines a length of the longer sides of each of the pixels (claim 3).

In regard to claims 1-5, Yamagishi teaches (Fig. 3) a liquid crystal display apparatus comprising:

- a liquid crystal layer comprising liquid crystal;
- a plurality of first scanning electrodes Y1-Y7 aligned in a first direction at a first pitch, each of the first scanning electrodes extending in a second direction substantially orthogonal to the first direction;
- a plurality of signal electrodes X1-X3 facing the first scanning electrodes with the liquid crystal layer sandwiched between the signal electrodes and the first scanning electrodes, the signal electrodes being aligned in the second direction at a second pitch wider than the first pitch and each of the signal electrodes extending in the first direction.

wherein the first pitch is 1/n of the second pitch, wherein n is 2 (claims 4-5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamagishi (US4920409A) as applied to claims 1-5 above in view of Masazumi (US6414669 B1).

Masazumi teaches a liquid crystal display apparatus comprising the liquid crystal having a memory effect (claim 27) wherein the liquid crystal exhibits a cholesteric phase (claim 28) and comprises a nematic liquid crystal compound and a chiral agent (claim 29) retaining the display states of the liquid crystals if the deselect signal is held below the prescribed threshold voltage.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display apparatus as Yamagishi disclosed with the liquid crystal having a memory effect (claim 27) wherein the liquid crystal exhibits a cholesteric phase (claim 28) and comprises a nematic liquid crystal compound and a chiral agent (claim 29) retaining the display states of the liquid crystals if the deselect signal is held below the prescribed threshold voltage.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Ishida et al. (US6476899B2) disclose a display layer for performing display; a flexible substrate for holding or carrying the display layer; a transparent electrode formed on the flexible substrate; and a metal film formed on the flexible substrate, electrically connected to the transparent electrode and made of a material different from that of the transparent electrode.

Bongaerts et al. (US5696569A) disclose a plasma-addressed electro-optic display device comprising (1280×3) columns and 1024 rows, and with a channel pitch

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$p=312.5\mu\text{m}$, a height $h=100\mu\text{m}$, and electrode widths $w=50\mu\text{m}$, the interelectrode spacing $d=100\mu\text{m}$.

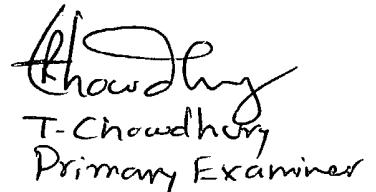
Yanagisawa (US5128786A) discloses a liquid crystal display device includes a pair of substrates opposed to each other, a plurality of first electrodes provided on one of the paired substrates, a plurality of second electrodes mounted over the other base plate to oppose the first electrodes, liquid crystal material interposed between the first and the second electrodes to form a plurality of image elements at a plurality of positions corresponding to those points of the first and second electrodes which are opposed to each other, and a black mask for shielding light from leaking through clearances between the adjacent image elements.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703) 306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

HOAN C. NGUYEN
Examiner
Art Unit 2871

chn
September 30, 2003


T-Chowdhury
Primary Examiner